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**Res. Agr. Eng.**

**Jadidi M.R., Sabuni  
M.S., Homayounifar M.,  
Mohammadi A.:**

# use pattern for tomato production in Iran: A case study from the Marand region

Res. Agr. Eng., 58 (2012): 50-56

The aim of the contribution was to determine energy consumption of input and output used in tomato production and to optimize the energy inputs in the Marand region, Iran. The study also sought to analyse the effect of farm size on energy use and input costs based on tomatoes production and to reveal the relationship between energy inputs and yield by developing mathematical models. Questions about energy management present very interesting and actual topic in this time. The results revealed that tomato production consumed a total of 65,238.9 MJ/ha of which fertilizers were 50.98% followed by water for irrigation (20.67%). Output-input energy and energy productivity were found to be 0.59 and 0.74 kg/MJ, respectively. The results of energy optimization showed that using existing energy inputs, the yield of tomato

can be increased by 45.2% in small farms, 43.5% in medium farms and 30% in large farms. The rate of direct, indirect, renewable and non-renewable energy forms were found to be 37.2, 62.8, 30.9 and 69.1% of total energy input, respectively. The main non-renewable inputs were chemical fertilizers and diesel fuel, management of plant nutrients and proper machinery selection to reduce diesel fuel use would increase rate of renewable energy.

### **Keywords:**

energy productivity; diesel fuel; optimization; non-renewable energy; Iran

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